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FINAL REPORT

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NASA Grant NAG 2-1080

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**Spectroscopic Observations of the Infrared Lines Normally Obscured
by Atmospheric Absorption**

Submitted: December 2, 1997

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Final Report NASA Grant NAG2-1080

This grant was for the analysis and write-up of data obtained on the NASA grant NAG2-208. It (NAG2-1080) began March 1, 1996 and expired October 31, 1997. Most of the background for the work done was given in the Final Report for NASA grant NAG2-208. The function of NASA grant NAG2-1080 was to complete analysis and write-up of data obtained earlier. This work has been completed and is represented by a number of new publications. In addition to the publications listed in the Final Report for NAG2-208, the present grant enabled us to complete and publish the following:

"A 158 micron [C II] map of M83," S.C. Madden, A. Poglitsch, N. Geis, G.J. Stacey, and C.H. Townes, Accepted for publication in *A&A*.

"C II 158 micron observations of IC 10: Evidence for hidden molecular hydrogen in irregular galaxies," S.C. Madden, A. Poglitsch, N. Geis, G.J. Stacey, and C.H. Townes, *ApJ* 483, 200 (1997).

"The Orion molecular clouds OMC-1 and OMC-2 mapped in the far-infrared fine-structure line emission of C⁺ and O⁰," F. Hermann, S.C. Madden, T. Nikola, A. Poglitsch, R. Timmermann, N. Geis, C.H. Townes, and G.J. Stacey, *ApJ* 481, 343 (1997).

We are delighted with the opportunities we have had to work in the KAO. It has been a very fruitful vehicle for scientific work, and we believe it has allowed us to be very productive. Some of us look forward with much pleasure to possible work in SOFIA.

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